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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/831,450	05/10/2001	Masatoshi Yamazaki	Q64418	4274

7590

06/03/2003

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EXAMINER

NGUYEN, CAM N

ART UNIT

PAPER NUMBER

1754

DATE MAILED: 06/03/2003

5

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
09/831,450

Applicant(s)
Yamazaki et al.

Examiner
Cam Nguyen

Art Unit
1754



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE three MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Mar 17, 2003
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on May 10, 2001 is/are a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____ 6) ☐ Other:

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DETAILED ACTION

1. Applicants' remarks and amendment, filed on March 17, 2003, have been carefully considered. Claims 1 & 3 have been amended.

Claims 1-3 remain pending in this application.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brezny (US Pat. 5,919,727) *in view of* Domesle et al., "hereinafter Domesle", (US Pat. 5,958,829).

Brezny discloses a composite powder containing cerium oxide and at least one other non-noble metal oxide in solid solution (see col. 2, ln 24-25). Suitable non-noble metal oxides include zirconia, yttria, lanthanides, actinide, and combinations thereof (see col. 2, ln 38-44). The powders having a surface area of about 60 m²/g; an oxygen storage capacity of the particles, up to about 700°C, is about 200 umol/g to about 600 umol/g, with an average of about 510 umol/g; and an oxygen storage capacity of particles, up to about 1000°C, is about 500 umol/g to

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about 1200 umol/g, with an average of about 1040 umol/g (see col. 2, ln 66- col. 3, ln 8). See also col. 3, ln 9-18. Brezny further discloses the composition is coated onto a substrate and has a noble metal catalyst deposited onto the composition (see col. 6, claim 14).

Brezny is silent with respect to the aluminum oxide support. However, it would have been *prima facie obvious* to one of ordinary skill in the art at the time the invention was made to have utilized aluminum oxide support in Brezny to obtain a supported catalyst having the advantage as disclosed in Domesle, which is an improved light-off performance, high conversion rates when the catalyst is warm from use and high long-term activity (see Domesle at col. 4, ln 66- col. 5, ln 1-2) because aluminum oxide is a well known and useful catalyst support as evidenced by Domesle (see Domesle at col. 6, ln 37-38 & col. 20, claim 9).

Regarding the claimed specific surface area, it is met by the teaching of the reference since it falls within the disclosed range (see Brezny at col. 2, ln 66- col. 3, ln 8).

Regarding the claimed oxygen storage capacity at 400°C and at 700°C, it is considered the claims are met by the teaching of the reference because Brezny teaches an oxygen storage capacity of the particles, up to about 700°C, is about 200 umol/g to about 600 umol/g (see Brezny at col. 2, ln 66- col. 3, ln 8). The phrase “up to about 700°C” encompasses the claimed “400°C” and “700°C”.

With respect to the product-by-process limitation in claim 2, it appears that the “sintering temperature condition of between 800 and 1100°C” is a process limitation. However, Brezny discloses after aging the composite powder at up to about 1000°C, the particles have a surface

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area of about 1 m²/g to about 50 m²/g, and the aged particles have an oxygen storage capacity, up to about 700°C, of about 300 umol/g to about 500 umol/g, with an average of about 400 umol/g, and an oxygen storage capacity up to about 1000°C, of about 500 umol/g to about 1200 umol/g, average about 670 umol/g (see Brezny at col. 3, ln 9-17). The claimed temperature is met by the reference since the disclosed temperature falls within the claimed temperature range.

Response to Arguments

4. Applicants' amendment/response filed on 3/17/03 has been fully considered, but deemed not persuasive for the following reasons.

Applicants urged, that "the Brezny does not teach or suggest the use of aluminum oxide in the composite powder. Further, applicants submit that it may be impossible to perform the spray pyrolysis process of Brezny in the presence of aluminum oxide. Aluminum oxide is not water soluble. Accordingly, no homogeneous aqueous solution can be formed" (applicants' response page 6, last paragraph). This is noted, but not found persuasive because: (1) it was admitted in the rejection that Brezny does not teach "aluminum oxide" support; however, the Domesle et al. reference was relied on as a secondary reference to show that "aluminum oxide" is a known and useful ~~and~~ catalyst support. It should be noted that the rejection was based on a combination of the references together, not individually. Thus, applicants' urging regarding a specific process of making aluminum oxide is irrelevant; and (2) since applicants' claims are

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drawn to a catalyst or a co-catalyst, the arguments regarding the difference in how the aluminum oxide support was made has no bearing on the patentability of the claimed catalyst or co-catalyst.

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Conclusion

6. Claims 1-3 are pending. Claims 1-3 are rejected. No claims are allowed.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Cam Nguyen, whose telephone number is (703) 305-3923. The

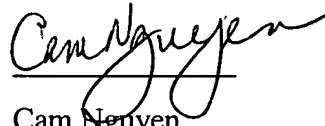
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examiner can normally be reached on M-F from 8:30 am. to 6:00 pm, with alternative Monday off.

The appropriate fax phone number for the organization where this application or proceeding is assigned is (703) 872-9310 (before finals) and (703) 872-9311 (after-final).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Nguyen/cnn *cnn*
June 2, 2003


Cam Nguyen
Patent Examiner
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